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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,205	12/02/2003	Bridget Mary Pantaleo	67389-034	4686

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McDERMOTT, WILL & EMERY  
600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER
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HECK, MICHAEL C

ART UNIT	PAPER NUMBER
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3623

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/725,205	PANTALEO ET AL.	
	Examiner	Art Unit	
	Michael Heck	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/2/03</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

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### DETAILED ACTION

1. The following is a First Office Action in response to the application filed 02 December 2003. Claims 1-56 are pending in this application and have been examined on the merits as discussed below.

#### *Drawings*

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 315.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: on page 20, Para 0052, "(Step 305)".

Corrected drawing sheets, and/or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The disclosure is objected to because of the following informalities: On page 22, Para 0056, line 11, delete, "September 2003 is 2150 hours", and insert -- September 2003 is **2100** hours --.

Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**Claim 1-21** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For the process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts. In the present case, **claims 1-21** only recite an abstract idea. As to **claim 1**, the recited method steps of: identify each of a plurality of tasks; identifying subtasks associated with each of

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the plurality of tasks; accessing production rate information related to a relationship between the amount of time or the number of staff needed to perform each of the identified subtasks; calculating a work volume based on the identified subtasks and the production rate information; accessing staff information; determining staff availability based on the staff information; and generating a capacity report based on the work volume and the staff availability does not apply, involve, use, or advance the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper. The method only constitutes an idea for capacity planning, therefore, is deemed to be directed to non-statutory subject matter.

As to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implications of employing a machine or article of manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble. In the present case, none of the recited steps are directed to anything in the technological arts as explained above. Looking at the claim as a whole, nothing in the body of the claim recites any structure or functionality to suggest that a computer performs the recited steps. Therefore, the preamble is taken to merely recite a field of use.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result. In the present case, the claimed invention produces capacity planning (i.e., repeatable, useful and tangible).

Looking at the claims as a whole, nothing in the body of the claims recite any structure or functionality to suggest that a computer performs a task. While claim 5 recites information is

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obtained from a database, this amounts to only data retrieval where nothing is done (i.e., computing) to breathe life into the invention.

Although the recited process produces a useful, concrete, and tangible result, since the claimed invention, as a whole, is not within the technological arts as explained above, the same rejection as stated above for claim 1 applies to claims 2-21.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented\*or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-6, 15-16, 20-27, 37-45, and 53-56** are rejected under 35 U.S.C. 102(b) as being anticipated by Scott (Scott, How CTI is Changing Workforce Management: What are the Possibilities for your Call Center?, Telemarketing & Call Center Solutions, Vol. 14, Issue 8, February 1996, start p. 74 [PROQUEST]). Scott discloses a capacity planning method and system comprising:

- [**Claim 1**] identify each of a plurality of tasks (Para 4, Scott teaches CTI (computer-telephony integration) introduces a greater degree of sophistication to workforce management by allowing more accurate targeting of incoming calls to specific TSRs (telephone service representatives) with specialized knowledge or skills.);
- identifying subtasks associated with each of the plurality of tasks (Para 20, Scott teaches scheduling TSRs to include determining when TSRs perform tasks other than answering calls (for example, outbound calling, training, meeting, research). The examiner interprets research as a subtask associated with a task.);
- accessing production rate information related to a relationship between the amount of time or the number of staff needed to perform each of the identified subtasks (Para

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19, Scott teaches the first step in capacity management involves forecasting call volume, call handling times and TSR staffing levels required by interval (for example every half hour) for each TSR group.);

- calculating a work volume based on the identified subtasks and the production rate information (Para 22, Scott teaches predicting the number of TSRs required for the next few hours, based upon actual caller behavior);
- accessing staff information (Para 20, Scott teaches scheduling TSRs to includes determining when shifts start and end, when breaks and lunches occur. The examiner interprets the above information as staff information.);
- determining staff availability based on the staff information (Para 22, Scott teaches workforce management systems provide tools to compare actual TSR availability to the schedule); and
- generating a capacity report based on the work volume and the staff availability (Para 23, Scott teaches workforce management systems provide extensive reporting that allows managers to compare reality to plans).
- [**Claim 2**] the production rate information includes the amount of time needed to perform respective identified subtasks (Para 5, 19 and 20, Scott teaches managers need to know how many minutes of each particular skill or knowledge is needed every half-hour. Forecasting demand includes call-handling times and TSR staffing levels required by interval. Scheduling TSRs include determining when TSRs perform tasks other than answering calls.).
- [**Claim 3**] the production rate information includes the number of each identified subtasks that can be performed per one time unit (Para 4, 19 and 20, Scott teaches CTI allows more accurate targeting of incoming calls to specific TSRs with specialized knowledge or skills. Capacity management involves forecasting TSR staffing levels required by interval (for example, every half hour) for each TSR group and then scheduling the TSRs. Implicitly the number of each identified subtask is known in order to schedule the right mix of TSRs.).
- [**Claim 4**] the time unit is an hour (Para 22, Scott teaches the workforce management system provides tools to predict the number of TSRs required for the next few hours).
- [**Claim 5**] the production rate information is obtained from a database or by observation (Para 19, Scott teaches workforce management systems can track years of history. Implicitly, a database is used.).
- [**Claim 6**] the work volume is calculated as the number of time units needed to perform the identified subtasks (Para 19, Scott teaches capacity management involves

forecasting call volume, call handling times and TSR staffing levels required by interval (for example every half hour) for each TSR group. Workforce management systems tracks years of history and performs the necessary calculations to help managers forecast accurately.).

- **[Claim 15]** the work volume is calculated as the amount of time needed to perform the subtasks; and the staff availability is calculated as the total amount of time that employees can perform the subtasks within a specific period of time (Para 20, Scott teaches management involves scheduling TSRs – determining when shift start and end, when breaks and lunches occur and when TSRs perform tasks other than answering calls. Good workforce management systems offer sophisticated algorithms that factor individual TSR availabilities and work shift preferences into schedule development.).
- **[Claim 16]** the total amount of time that employees can perform the subtasks within the specific period of time is calculated by using the equation of: (the number of employees) · (the number of standard work hours per day) · (the number of business days within the specific period of time) - (the amount of time lost due to staff outage within the specific period of time) - (the amount of work time that cannot be used to perform the subtasks within the specific period of time) (Para 20 and 21, Scott teaches scheduling agents. Scheduling TSRs involves determining shift start and end, when breaks and lunches occur and when TSRs perform task other than answering calls (for example, outbound calling, training, meeting, research). Forecasting and scheduling are performed days or weeks in advance. Inherently, the equation is used to schedule the number of TSRs required to handle the forecasted demand.).
- **[Claim 20]** the staff availability is calculated based on at least one of the number of employees, the information related to staff outage, the information related to the amount of work time that cannot be used to perform the subtasks, the information related to business days, and the amount of defined work hours per day (Para 20 and 21, Scott teaches scheduling agents. Scheduling TSRs involves determining shift start and end, when breaks and lunches occur and when TSRs perform task other than answering calls (for example, outbound calling, training, meeting, research). Forecasting and scheduling are performed days or weeks in advance. Inherently, the forecast and schedule are calculated.).
- **[Claim 21]** the information related to the amount of work time that cannot be used to perform the subtasks depends on at least one of the position, the identity, the exempt status, the handling capability, and the outage status of the respective employee (Para 20 and 21, Scott teaches scheduling agents. Scheduling TSRs involves determining shift start and end, when breaks and lunches occur and when TSRs perform task other than answering calls (for example, outbound calling, training, meeting, research). Forecasting and scheduling are performed days or weeks in advance.).



**Claims 22-27, 37-45 and 53-56** substantially recites the same limitations as that of claims 1-6, 15-16 and 20-21 with the distinction of the recited method being a system and a program. Hence the same rejection for claims 1-6, 15-16 and 20-21 as applied above applies to claims 22-27, 37-45, and 53-56.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 7-11, 19, 28-33 and 46-49** are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (Scott, How CTI is Changing Workforce Management: What are the Possibilities for your Call Center?, Telemarketing & Call Center Solutions, Vol. 14, Issue 8, February 1996, start p. 74 [PROQUEST]) in view of Reynolds (Reynolds, Automating for Better Workforce Management, Call Center Solutions, March 1999, p. 74-80 [PROQUEST]). As to claim 7, Scott discloses a capacity planning method and system but failed to teach the work volume is calculated as the number of fulltime employees needed to perform the identified subtasks, based on standard work hours per day. Reynolds teaches a telephone traffic engineering technique is used to determine the required number of staff based on the forecast workload. "Bodies in chairs" staff requirements along with nonproductive time estimates (for breaks, training, meetings, etc.) are used to determine a scheduling requirement for each half-hour or quarter hour period. A set of optimal schedules is then created based on these

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requirements and a call center's unique scheduling rules and constraints. These schedules are then assigned to staff based on shift bid rules and employee preferences. The savings associated with more efficient scheduling can take many forms, including reduced overall staff hours, reduced need for overtime and identification of overstaffed periods (p. 76-77). The examiner interprets standard work hours per day per staff member is used since overtime avoidance is a factor in calculating savings. It would have been obvious to one of ordinary skill in the art to include the calculated staffing requirements of Reynolds with the teachings of Scott because Scott teaches workforce management system provide the right number of telephone sales representatives with the right skills and attitudes to meet caller demand in every period of every day (Para 1 and 2). Meeting customer demands to ensure customer satisfaction at minimal cost is a goal for profit-oriented companies. Matching and scheduling the right resources with the customer demand ensures the customers requirements will be met, therefore, minimizing cost and ensuring customer satisfaction.

- **[Claim 8]** the standard work hours per day are configurable (Reynolds: p. 76, Reynolds teaches a set of optimal schedules is then created based on these requirements and a call center's unique scheduling rules and constraints).
- **[Claim 9]** the staff information includes at least one of information related to the number of employees, capability of a specific employee to perform the subtasks, information related to exempt status of employees, information related to staff outage, information related to work time that cannot be used to perform the subtasks, and information related to business days within a specific period of time (Scott: Para 16, Scott teaches workforce management systems help managers determine the number of TSRs needed to meet anticipated calling demand effectively and affordably).
- **[Claim 10]** the information related to the number of employees includes at least one of the number of full-time employees, the number of other types of employees, the total hours worked by other types of employees expressed as a full-time employee equivalent; and the other types of employees include at least one of part-time employees, temporary employees, interns, and borrowed staff (Reynolds: P. 76, Table

1 and 3, Reynolds teaches a mixture of full- and part-time staff and shows the staff cost savings and annual staff cost).

- [Claim 11] the step of calculating extended staff availability by considering extended work hours; and wherein the capacity report is generated further based on the extended staff availability (Scott: Para 23, Scott teaches workflow management systems provide extensive reporting that allows managers to compare reality with plans to include answering questions such as how well did we do in adjusting our schedule to respond to what actually happened during the day.).
- [Claim 19] the capacity report includes a cost analysis (Reynolds: Table 1, 2, 3, and 4, Reynolds teaches calculating savings.).

**Claims 28-33, and 46-49** substantially recite the same limitations as that of claims 7-11 with the distinction of the recited method being a system and a program. Hence the same rejection for claims 7-11 as applied above applies to claims 28-30, 32-33, and 46-49.

10. **Claims 12-13, 17-18, 34-35 and 50-51** are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (Scott, How CTI is Changing Workforce Management: What are the Possibilities for your Call Center?, Telemarketing & Call Center Solutions, Vol. 14, Issue 8, February 1996, start p. 74 [PROQUEST]) and Reynolds (Reynolds, Automating for Better Workforce Management, Call Center Solutions, March 1999, p. 74-80 [PROQUEST]) in view of Randhawa et al. (Randhawa et al., A Microcomputer-based Data Management and Capacity-planning System, International Journal of Operations & Production Management, Vol. 10, Issue 5, 1990, p. 52-61 [EBSCO]). As to claim 12, Scott and Reynolds disclose a capacity planning method and system but fail to teach the extended staff availability is calculated based on a plurality of overtime scenarios or a plurality of expanded staff scenarios. Randhawa et al. teach the scheduling module enables users to interactively change the initial schedule to achieve a balance workload over the specified time horizon (p. 55). It would have been obvious to one of

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ordinary skill in the art at the time of the applicant's invention to include the interactive change capability of Randhawa et al. with the teachings of Scott and Reynolds because Reynolds teaches more efficient scheduling to increase savings (p. 77). Meeting customer demands to ensure customer satisfaction at minimal cost is a goal for profit-oriented companies. Matching and scheduling the right resources with the customer demand ensures the customers requirements will be met, therefore, minimizing cost and ensuring customer satisfaction.

- **[Claim 13]** the capacity report is generated based on a first comparison between the work volume and the staff availability, and a second comparison between the work volume and the extended staff availability (Randhawa et al.: p. 55, Randhawa et al. teach the scheduling module produces graphs and reports for the schedules that are generated).
- **[Claim 17]** the step of calculating extended staff availability by considering extended work hours; and wherein the capacity report is generated further based on the extended staff availability (Randhawa et al.: p. 55, Randhawa et al. teach the scheduling module enables users to interactively change the initial schedule to achieve a balance workload over the specified time horizon. The scheduling module produces graphs and reports for the schedules that are generated).
- **[Claim 18]** the extended staff availability is calculated based on a plurality of over time scenarios or on a plurality of expanded staff scenarios (Randhawa et al.: p. 55, Randhawa et al. teach the scheduling module enables users to interactively change the initial schedule to achieve a balance workload over the specified time horizon.).

**Claims 34-35 and 50-51** substantially recite the same limitations as that of claims 12-13 with the distinction of the recited method being a system and a program. Hence the same rejection for claims 12-13 as applied above applies to claims 34-35 and 50-51.

11. **Claims 14, 36 and 52** are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott (Scott, How CTI is Changing Workforce Management: What are the Possibilities for your Call Center?, Telemarketing & Call Center Solutions, Vol. 14, Issue 8, February 1996, start p. 74

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[PROQUEST]) and Reynolds (Reynolds, Automating for Better Workforce Management, Call Center Solutions, March 1999, p. 74-80 [PROQUEST]) and Randhawa et al. (Randhawa et al., A Microcomputer-based Data Management and Capacity-planning System, International Journal of Operations & Production Management, Vol. 10, Issue 5, 1990, p. 52-61 [EBSCO]) as applied to claim 1. As to claims 14, the examiner takes Official Notice that the step of generating warnings based on the first comparison and the second comparison. For example, in generating an EXCEL spread sheet, a user can identify a calculation and highlight areas of concern by having the spreadsheet indicate the results in a different color, therefore, alerting the user that an issue may exist or a decision point has been reached. It would have been obvious to one of ordinary skill in the capacity planning art to use the alert system of EXCEL with the teachings of Scott, Reynolds, and Randhawa et al. since Randhawa et al. teach interactively changing the initial schedule to achieve a balance workload (p. 55). Capacity planning understands demand versus resources and allows the user to plan ahead to balance the load. Unbalanced situation require action whether they be on the demand or resource side of the equation. Visibly highlighting the variances alerts the user that action is required, therefore, ensuring the user can accurate plan ahead for a balance load.

*Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Chapman (U.S. Patent 5,291,394) discloses a manufacturing control and capacity planning system where resources are allocated to lots to closely mimic actual allocation of resources.
- Carney (U.S. Patent 5,784,452) discloses a telephony call center with agent work groups that allow agents to be assigned and grouped into work groups.
- Villanova et al. (U.S. Patent 6,459,946) discloses a method and system for determining operator staffing at a semiconductor wafer work center to achieve a wafer-manufacturing goal.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Heck whose telephone number is (703) 305-8215. The examiner can normally be reached Monday thru Friday between the hours of 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq R. Hafiz can be reached on (703) 305-9643.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Any response to this action should be mailed to:

**Director of the United States Patent and Trademark Office**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**

Or faxed to:

<b>(703) 872-9306</b>	[Official communications; including After Final communications labeled " <b>Box AF</b> "]
<b>(703) 746-9419</b>	[Informal/Draft communication, labeled " <b>PROPOSED</b> " or " <b>DRAFT</b> "]

Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, Virginia, and the 7th floor receptionist.

mch  
24 June 2004

  
**TARIQ R. HAFIZ**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3600**